

WHAT IS CLAIMED IS:

1. A device comprising:

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a processor;

a network interface configured to couple the device to a network; and

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a memory comprising program instructions, wherein the program instructions are executable within the device to:

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obtain one or more mechanisms for accessing a set of peer-to-peer platform resources from one or more peer nodes on the network, wherein the one or more peer nodes participate in a peer-to-peer environment on the network to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content, and wherein the one or more mechanisms for accessing the set of peer-to-peer platform resources includes:

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a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

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a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes; and

access the set of peer-to-peer platform resources using the one or more mechanisms to participate as a peer node in the peer-to-peer environment.

5 2. The device as recited in claim 1, wherein the one or more mechanisms include one or more advertisements for the set of resources.

3. The device as recited in claim 1, wherein the one or more mechanisms include one or more code mechanisms for accessing the set of resources.

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4. The device as recited in claim 1, wherein the one or more mechanisms include a mechanism for accessing a peer resolver service for sending search queries to other peer nodes in the peer-to-peer environment in accordance with a peer resolver protocol.

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5. The device as recited in claim 1, wherein the one or more mechanisms include a mechanism for accessing a peer information service for obtaining information about peer nodes' capabilities and status in accordance with a peer information protocol.

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6. The device as recited in claim 1, wherein the one or more mechanisms include a mechanism for accessing a pipe binding service for finding a physical location of a pipe endpoint and binding the pipe endpoint to a peer node in accordance with a pipe binding protocol, wherein a pipe endpoint corresponds to a network interface of a peer node.

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7. The device as recited in claim 1, wherein the one or more mechanisms include a mechanism for accessing an endpoint routing service for obtaining network route information to peer nodes in accordance with an endpoint routing protocol.

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8. The device as recited in claim 1, wherein the program instructions are further operable to:

terminate participation of the device in the peer-to-peer environment;

maintain the one or more mechanisms in memory of the device; and

5 access the one or more maintained mechanisms to again participate in the peer-to-peer environment.

9. The device as recited in claim 1, wherein the program instructions are further operable to:

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terminate participation of the device in the peer-to-peer environment;

obtain one or more updated mechanisms for accessing the set of peer-to-peer platform resources from the one or more peer nodes; and

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access the set of peer-to-peer platform resources using the one or more updated mechanisms to again participate in the peer-to-peer environment;

10. The device as recited in claim 1, wherein to obtain the one or more mechanisms, the program instructions are further executable to locate one or more peer nodes on the peer-to-peer network.

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11. The device as recited in claim 1, wherein, to obtain the one or more mechanisms, the program instructions are further executable to:

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send a message to a particular peer node of the one or more peer nodes requesting the one or more mechanisms; and

receive the one or more mechanisms from the peer node in response to the request.

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12. The device as recited in claim 1, wherein the device is configured to execute the program instructions to:

5 obtain the one or more mechanisms during an initialization process of the device;
 and

 access the set of resources using the one or more mechanisms during the
 initialization process of the device.

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13. A peer node comprising:

 a processor;

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 a network interface configured to couple the peer node to a network;

 a memory operable to store program instructions, wherein the program
 instructions are executable by the processor to:

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 receive a request from a device on the network, wherein the request
 specifies one or more mechanisms for accessing a set of peer-to-
 peer platform resources for use by the device in participating in a
 peer-to-peer environment.

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 provide one or more mechanisms for accessing a set of peer-to-peer
 platform resources to the device on the network in response to the
 request; and

 wherein the one or more mechanisms include:

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a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

5 a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes.

10 14. The peer node as recited in claim 13, wherein the one or more mechanisms include one or more advertisements for the set of resources.

15 15. The peer node as recited in claim 13, wherein the one or more mechanisms include one or more code mechanisms for accessing the set of resources.

16. The peer node as recited in claim 13, wherein the one or more mechanisms include one or more of a mechanism for accessing a peer resolver service for sending search queries to other peer nodes in the peer-to-peer environment in accordance with a peer resolver protocol, a mechanism for accessing a peer information service for obtaining information about peer nodes' capabilities and status in accordance with a peer information protocol, a mechanism for accessing a pipe binding service for finding a physical location of a pipe endpoint and binding the pipe endpoint to a peer node in accordance with a pipe binding protocol, wherein a pipe endpoint corresponds to a network interface of a peer node, and a mechanism for accessing an endpoint routing service for obtaining network route information to peer nodes in accordance with an endpoint routing protocol.

25 17. The peer node as recited in claim 13, wherein the program instructions are further executable to:

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maintain version information for each of the one or more mechanisms; and

if a particular mechanism of the one or more mechanisms is updated to a new version, provide the new version of the mechanism to the device.

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18. A peer computing system, comprising:

a plurality of peer nodes operable to couple to a network, wherein the plurality of peer nodes are configured to implement a peer-to-peer environment on the network in accordance with one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share network resources in the peer-to-peer environment;

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one of the plurality of peer nodes operable to maintain one or more mechanisms for accessing a set of peer-to-peer platform resources on the network, wherein the one or more mechanisms are obtainable by devices on the network to enable the devices to participate in the peer-to-peer environment, wherein the one or more mechanisms include:

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a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

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a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes on the network; and

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a device operable to:

couple to the network;

obtain the one or more mechanisms from the peer node on the network;

5 and

access the set of resources using the one or more mechanisms to
participate as a peer node in the peer-to-peer environment.

10 19. The peer computing system as recited in claim 18, wherein the one or more
mechanisms include one or more advertisements for the set of resources.

20. The peer computing system as recited in claim 18, wherein the one or more
mechanisms include one or more code mechanisms for accessing the set of resources.

15 21. The peer computing system as recited in claim 18, wherein the plurality of
peer nodes are members peers in a peer group that provides a common set of services to
member peers of the peer group.

20 22. The peer computing system as recited in claim 18, wherein the one or more
mechanisms include one or more of a mechanism for accessing a peer resolver service for
sending search queries to other peer nodes in the peer-to-peer environment in accordance
with a peer resolver protocol, a mechanism for accessing a peer information service for
obtaining information about peer nodes' capabilities and status in accordance with a peer
25 information protocol, a mechanism for accessing a pipe binding service for finding a
physical location of a pipe endpoint and binding the pipe endpoint to a peer node in
accordance with a pipe binding protocol, wherein a pipe endpoint corresponds to a
network interface of a peer node, and a mechanism for accessing an endpoint routing
service for obtaining network route information to peer nodes in accordance with an
30 endpoint routing protocol.

23. The peer computing system as recited in claim 18, wherein the one of the plurality of peer nodes is further operable to:

5 maintain version information for each of the one or more mechanisms; and

if a particular mechanism of the one or more mechanisms is updated to a new version, provide the new version of the mechanism to the device.

10 24. The peer computing system as recited in claim 18, wherein the device is operable to:

terminate participation of the device in the peer-to-peer environment;

15 maintain the one or more mechanisms in memory of the device; and

access the one or more maintained mechanisms to again participate in the peer-to-peer environment.

20 25. The peer computing system as recited in claim 18, wherein the device is operable to:

terminate participation of the device in the peer-to-peer environment;

25 obtain one or more updated mechanisms for accessing the set of peer-to-peer platform resources from the one of the plurality of peer nodes; and

access the set of peer-to-peer platform resources using the one or more updated mechanisms to again participate in the peer-to-peer environment;

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26. The peer computing system as recited in claim 18, wherein to obtain the one or more mechanisms, the device is operable to locate the one of the plurality of peer nodes.

5 27. The peer computing system as recited in claim 18, wherein, to obtain the one or more mechanisms, the device is operable to:

send a message to the one of the plurality of peer nodes requesting the one or more mechanisms; and

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receive the one or more mechanisms from the one of the plurality of peer nodes in response to the request.

15 28. The peer computing system as recited in claim 18, wherein the device is operable to:

obtain the one or more mechanisms during an initialization process of the device; and

20 access the set of resources using the one or more mechanisms during the initialization process of the device.

29. A peer computing system, comprising:

25 means for a plurality of peer nodes on a network to implement a peer-to-peer environment on the network in accordance with one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discovery each other, communicate with each other, and cooperate with each other to form peer groups and share network resources in the peer-to-peer environment;

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5 means for maintaining one or more mechanisms for accessing a set of peer-to-peer platform resources on the network, wherein the one or more mechanisms are obtainable by devices on the network to enable the devices to participate in the peer-to-peer environment, wherein the one or more mechanisms include:

10 a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

15 a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes on the network; and

means for obtaining the one or more mechanisms on the network; and

20 means for accessing the one or more mechanisms to participate as a peer node in the peer-to-peer environment.

30. The peer computing system as recited in claim 29, wherein the one or more mechanisms include one or more advertisements for the set of resources.

25 31. The peer computing system as recited in claim 29, wherein the one or more mechanisms include one or more code mechanisms for accessing the set of resources.

30 32. The peer computing system as recited in claim 29, wherein the plurality of peer nodes are members peers in a peer group that provides a common set of services to member peers of the peer group.

33. The peer computing system as recited in claim 29, further comprising:

means for maintaining version information for each of the one or more mechanisms; and

if a particular mechanism is updated to a new version of the mechanism, means for providing the new version of the mechanism to the device.

34. The peer computing system as recited in claim 29, further comprising:

means for terminating participation of a device in the peer-to-peer environment;

means for maintaining the one or more mechanisms in memory of the device; and

means for accessing the one or more maintained mechanisms to allow the device to again participate in the peer-to-peer environment.

35. The peer computing system as recited in claim 29, further comprising:

means for terminating participation of a device in the peer-to-peer environment;

means for obtaining one or more updated mechanisms for allowing the device to access the set of peer-to-peer platform resources; and

means for accessing the set of peer-to-peer platform resources using the one or more updated mechanisms to allow the device to again participate in the peer-to-peer environment;

36. The peer computing system as recited in claim 29, wherein the means for obtaining the one or more mechanisms comprise means for locating a peer node on the network providing the one or more mechanisms.

5 37. The peer computing system as recited in claim 29, wherein means for obtaining one or more mechanisms comprises:

means for sending a message to one of the plurality of peer nodes requesting the one or more mechanisms; and

10 means for receiving the one or more mechanisms from the one of the plurality of peer nodes in response to the request.

38. The peer computing system as recited in claim 29, further comprising:

15 means for obtaining the one or more mechanisms during an initialization process of a device; and

20 means for accessing the set of resources using the one or more mechanisms during the initialization process of the device.

39. A method comprising:

25 a device obtaining one or more mechanisms for accessing a set of peer-to-peer platform resources from one or more peer nodes on the network, wherein the one or more peer nodes participate in a peer-to-peer environment on the network to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content, and wherein the one or more mechanisms include:

a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

5 a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes; and

10 the device accessing the set of peer-to-peer platform resources using the one or more mechanisms to participate as a peer node in the peer-to-peer environment.

40. The method as recited in claim 39, wherein the one or more mechanisms
15 include one or more advertisements for the set of resources.

41. The method as recited in claim 39, wherein the one or more mechanisms include one or more code mechanisms for accessing the set of resources.

20 42. The method as recited in claim 39, further comprising:

the device terminating participation of the device in the peer-to-peer environment;

the device maintaining the one or more mechanisms in memory of the device;
25 the device accessing the one or more mechanisms to again participate in the peer-to-peer environment.

43. The method as recited in claim 39, further comprising:

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the device terminating participation of the device in the peer-to-peer environment;

the device obtaining one or more updated mechanisms for accessing the set of peer-to-peer platform resources from the one or more peer nodes; and

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the device accessing the set of peer-to-peer platform resources using the one or more updated mechanisms to participate in the peer-to-peer environment;

44. The method as recited in claim 39, wherein obtaining the one or more mechanisms comprises the device locating one or more peer nodes on the peer-to-peer network.

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45. The method as recited in claim 39, wherein obtaining the one or more mechanisms comprises:

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the device sending a message to a particular peer node of the one or more peer nodes requesting the one or more mechanisms; and

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the device receiving the one or more mechanisms from the peer node in response to the request.

46. The method as recited in claim 39, further comprising:

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the device obtaining the one or more mechanisms during an initialization process of the device; and

the device accessing the set of resources using the one or more mechanisms during the initialization process of the device.

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47. A method comprising:

5 a peer node on a network receiving a request from a device on the network,
 wherein the request specifies one or more mechanisms for accessing a set
 of peer-to-peer platform resources for use by the device in participating in
 a peer-to-peer environment.

the peer node providing the one or more mechanisms to the device in response to
 the request; and

10 wherein the one or more mechanisms include:

a mechanism for accessing a discovery service for discovering resources in
 the peer-to-peer environment in accordance with a peer discovery
 protocol; and

15 a mechanism for accessing a membership service for applying for
 membership in accordance with a peer membership protocol in one
 or more peer groups each comprising a set of cooperating peer
 nodes.

20 48. The method as recited in claim 47, wherein the one or more mechanisms
 include one or more advertisements for the set of resources.

25 49. The method as recited in claim 47, wherein the one or more mechanisms
 include one or more code mechanisms for accessing the set of resources.

50. The method as recited in claim 47, further comprising:

30 the peer node maintaining version information for each of the one or more
 mechanisms; and

if a particular mechanism of the one or more mechanisms is updated to a new version, the peer node providing the new version of the mechanism to the device.

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51. A method, comprising:

10 a plurality of peer nodes on a network, implementing a peer-to-peer environment on the network in accordance with one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discovery each other, communicate with each other, and cooperate with each other to form peer groups and share network resources in the peer-to-peer environment;

15 one of the plurality of peer nodes maintaining one or more mechanisms for accessing a set of peer-to-peer platform resources on the network, wherein the one or more mechanisms are obtainable by devices on the network to enable the devices to participate in the peer-to-peer environment, wherein the one or more mechanisms include:

20 a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

25 a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes on the network; and

30 a device on the network obtaining the one or more mechanisms from the peer node on the network; and

the device accessing the set of resources using the one or more mechanisms to participate as a peer node in the peer-to-peer environment.

5 52. The method as recited in claim 51, wherein the one or more mechanisms include one or more advertisements for the set of resources.

53. The method as recited in claim 51, wherein the one or more mechanisms include one or more code mechanisms for accessing the set of resources.

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54. The method as recited in claim 51, wherein the plurality of peer nodes are members peers in a peer group that provides a common set of services to member peers of the peer group.

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55. The method as recited in claim 51, further comprising:

the one of the plurality of peer nodes maintaining version information for each of the one or more mechanisms; and

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if a particular mechanism of the one or more mechanisms is updated to a new version, the one of the plurality of peer nodes providing the new version of the mechanism to the device.

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56. The method as recited in claim 51, further comprising:

the device terminating participation of the device in the peer-to-peer environment;

the device maintaining the one or more mechanisms in memory of the device; and

the device accessing the one or more mechanisms to again participate in the peer-to-peer environment.

57. The method as recited in claim 51, further comprising:

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the device terminating participation of the device in the peer-to-peer environment;

the device obtaining one or more updated mechanisms for accessing the set of peer-to-peer platform resources from the one or more peer nodes; and

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the device accessing the set of peer-to-peer platform resources using the one or more updated mechanisms to participate in the peer-to-peer environment;

58. The method as recited in claim 51, wherein obtaining the one or more mechanisms comprises:

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the device sending a message to the one of the plurality of peer nodes requesting the one or more mechanisms; and

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the device receiving the one or more mechanisms from the one of the plurality of peer nodes in response to the request.

59. An article of manufacture comprising program instructions, wherein the program instructions are computer-executable to implement:

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a device obtaining one or more mechanisms for accessing a set of peer-to-peer platform resources from one or more peer nodes on the network, wherein the one or more peer nodes participate in a peer-to-peer environment on the network to discover each other, communicate with each other, and

cooperate with each other to form peer groups and share content, and wherein the one or more mechanisms include:

5 a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

10 a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes; and

15 the device accessing the set of peer-to-peer platform resources using the one or more mechanisms to participate as a peer node in the peer-to-peer environment.

60. An article of manufacture comprising program instructions, wherein the program instructions are computer-executable to implement:

20 a peer node on a network receiving a request from a device on the network, wherein the request specifies one or more mechanisms for accessing a set of peer-to-peer platform resources for use by the device in participating in a peer-to-peer environment.

25 the peer node providing the one or more mechanisms to the device in response to the request; and

wherein the one or more mechanisms include:

a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

5 a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one or more peer groups each comprising a set of cooperating peer nodes.

10 61. An article of manufacture comprising program instructions, wherein the program instructions are computer-executable to implement:

a plurality of peer nodes on a network, implementing a peer-to-peer environment on the network in accordance with one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discovery each other, communicate with each other, and cooperate with each other to form peer groups and share network resources in the peer-to-peer environment;

one of the plurality of peer nodes maintaining one or more mechanisms for accessing a set of peer-to-peer platform resources on the network, wherein the one or more mechanisms are obtainable by devices on the network to enable the devices to participate in the peer-to-peer environment, wherein the one or more mechanisms include:

25 a mechanism for accessing a discovery service for discovering resources in the peer-to-peer environment in accordance with a peer discovery protocol; and

a mechanism for accessing a membership service for applying for membership in accordance with a peer membership protocol in one

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or more peer groups each comprising a set of cooperating peer nodes on the network; and

5 a device on the network obtaining the one or more mechanisms from the peer node on the network; and

the device accessing the set of resources using the one or more mechanisms to participate as a peer node in the peer-to-peer environment.

Accepted for Chapter